

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1 and 3 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1 and 3 of copending Application 10/677766. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

3. Claims 1 and 3 of this application conflict with claims 1 and 3 of application No. 10/677766.

37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application.

Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Kawasaki-shi (EP 1,143,706).

6. Claim 1, AAPA discloses a CMOS image sensor (Page1, Line 11, Background section of the specification) comprising:

(a) A plurality of pixels each having a photo-sensitive element (Photodiode) that receives light that is converted into charge and conversion circuitry (Horizontal electronics) that converts the charge into a voltage signal; wherein the plurality of pixels

are integrated at substantially a same time (Page 1, Line 10-18);

(b). Readout electronics (Horizontal Electronics) that receives the voltage signal from the conversion circuitry of the plurality of pixels and passes the charge therefrom (Page 1, Line 19-21);

AAPA does not teach the readout electronics are de-energized during substantial integration of the pixels and energized during readout.

However Kawasaki-shi discloses an image sensor (Figure 1, Page 4, Section 0024) comprising a read-out circuit (Page 2, Section 0017, Line 49) wherein the control circuit of the image sensor which repeats sequential operation of light integration period, a read-out period, in a case where the light integration period, the control circuit causes a pixel array to perform light integration without supplying power-off period to a read-out circuit, and in the read-out period, the control circuit of the image sensor causes the read-out circuit to read out integral signals and in the power-off-period, ceases to supply power to the pixel array and the read-out circuit (Page 2, Section 0019 and Section 0020).

Therefore it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the image sensor of AAPA with image sensor of Kawasaki-shi to how the read-out circuit should to be de-energized or with no supply power during a period of substantial integration of the pixels and to energized or supply power during a period of readout. The motivation to do so would be to reduce the power consumption of the image sensor (Page 2, Section 0020).

7. Claim 3, AAPA discloses an image sensor for a digital camera comprising:

(a) a CMOS image sensor (AAPA, Page1, Line 11, Background section of the specification) comprising:

(al) a plurality of pixels each having a photo-sensitive element (AAPA, Photodiode) that receives light that is converted into charge and conversion circuitry (Horizontal electronics) that converts the charge into a voltage signal; wherein the plurality of pixels are integrated at substantially a same time (Page 1, Line 10-18);

(a2) readout electronics (Horizontal Electronics) that receives the voltage signal from the conversion circuitry of the plurality of pixels and passes the charge therefrom (Page 1, Line 19-21);

AAPA does not teach the readout electronics are de-energized during substantial integration of the pixels and energized during readout.

However Kawasaki-shi discloses an image senor (Figure 1, Page 4, Section 0024) comprising a read-out circuit (Page 2, Section 0017, Line 49) wherein the control circuit of the image sensor which repeats sequential operation of light integration period, a read-out period, in a case where the light integration period, the control circuit causes a pixel array to perform light integration without supplying power-off period to a read-out circuit, and in the read-out period, the control circuit of the image sensor causes the read-out circuit to read out integral signals and in the power-off-period, ceases to supply power to the pixel array and the read-out circuit (Page 2, Section 0019 and Section 0020).

Therefore it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the image sensor of AAPA with image sensor of Kawasaki-shi to how the read-out circuit should to be de-energized or with no supply power during a period of substantial integration of the pixels and to energized or supply power during a period of readout. The motivation to do this is to reduce the power consumption of the image sensor (Page 2, Section 0020).

8. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Kawasaki-shi (EP 1,143,706) in further view of Levine (US 6,433,326 B1).

9. Claim 2, AAPA in view of Kawasaki-shi does not disclose The CMOS image sensor readout electronics as being a horizontal output CCD.

However Levine discloses an imager formed using a horizontal CCD readout register (Col 4, Line 15-40).

Therefore it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the imager of AAPA in view of Kawasaki-shi' readout electronics with Levine's readout electronics (Horizontal CCD readout register). The motivation to combine would be to reduce or remove dark current from the pixel area of the imager and it also serves as blooming control to reduce optical overloads.

10. Claim 4, AAPA in view of Kawasaki-shi does not disclose The CMOS image sensor readout electronics as being a horizontal output CCD.

However Levine discloses an imager formed using a horizontal CCD readout register (Col 4, Line 19-21).

Therefore it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the imager of AAPA in view of Kawasaki-shi readout electronics with Levine's readout electronics (Horizontal CCD readout register). The motivation to combine would be to reduce or remove dark current from the pixel area of the imager and it also serves as blooming control to reduce optical overloads.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SELAM T. GEBRIEL whose telephone number is (571)270-1652. The examiner can normally be reached on Monday-Thursday 7.30am-5.00pm.If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hai Tran can be reached on 571-272-7305. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Supervisory Patent Examiner, Art Unit 4178